

Client's ref.: TSMC2003-0934/PE:SimonLu

Our ref.: 0503-A30087-USf/Yianhou/Kevin/Nelson

What is claimed is:

1 1. A system of coinsurance wafer management for use in
2 MPW (multi-project wafer) shuttle service, comprising at least:
3 a production line to process at least a MPW shuttle
4 including a plurality of original wafers and a
5 quantity of coinsurance wafers with a common
6 fabrication process before metal layering, process
7 the original wafers with different metal layering
8 fabrication processes according to a metal layering
9 technology of each device design of the MPW shuttle,
10 and withhold the coinsurance wafers without further
11 fabrication.

1 2. The system of claim 1 wherein the MPW shuttle is split
2 into a plurality of child lots according to the metal layering
3 technology of each device design of the MPW shuttle when the
4 common fabrication process is complete, in which one child lot
5 comprises the coinsurance wafers, and the other child lots are
6 processed with different metal layering fabrication processes.

Client's ref.: TSMC2003-0934/PE:SimonLu

Our ref.: 0503-A30087-USf/Yianhou/Kevin/Nelson

1 3. The system of claim 1 wherein the production line
2 further releases at least one of the coinsurance wafers to
3 replace each original wafer scrapped in the common fabrication
4 process.

1 4. The system of claim 1 wherein the production line
2 further releases at least one of the coinsurance wafers, and
3 processes it with the metal layering fabrication process
4 corresponding to each original wafer scrapped in the metal
5 layering fabrication process.

1 5. The system of claim 1 further comprising a delivery
2 unit to deliver respective products of each device design
3 fabricated from the original wafers to corresponding clients.

1 6. The system of claim 1 further comprising an order
2 management unit to receive a request for at least one designated
3 device design of the device designs after the metal layering
4 fabrication processes.

1 7. The system of claim 6 wherein the request is received
2 before a cutoff date of the MPW shuttle.

Client's ref.: TSMC2003-0934/PE:SimonLu

Our ref.: 0503-A30087-USf/Yianhou/Kevin/Nelson

1 8. The system of claim 6 wherein the production line
2 further releases at least one coinsurance wafer for processes
3 with the corresponding metal layering fabrication process when
4 the request is received.

1 9. The system of claim 1 further comprising a
2 transmission unit to transfer information of the coinsurance
3 wafers to clients via a network.

1 10. The system of claim 9 wherein the transmission unit
2 further transfers information of the original wafers
3 corresponding to the respective device designs to the
4 corresponding clients.

1 11. The system of claim 1 wherein the metal layering
2 technology is the number of metal layers of each device design.

1 12. The system of claim 1 further comprising a
2 determination unit to determine the quantity of coinsurance
3 wafers according to a scrapping rate and the quantity of the
4 original wafers.

Client's ref.: TSMC2003-0934/PE:SimonLu

Our ref.: 0503-A30087-USf/Yianhou/Kevin/Nelson

1 13. A method of coinsurance wafer management for use in
2 MPW (multi-project wafer) shuttle service, comprising the steps
3 of:

4 processing at least one MPW shuttle with a common
5 fabrication process before metal layering, in which
6 the MPW shuttle includes a plurality of original
7 wafers and a quantity of coinsurance wafers;

8 processing the original wafers with different metal
9 layering fabrication processes according to a metal
10 layering technology of each device design of the MPW
11 shuttle; and

12 withholding the coinsurance wafers without further
13 fabrication.

1 14. The method of claim 13 further comprising splitting
2 the MPW shuttle into a plurality of child lots according to the
3 metal layering technology of each device design of the MPW
4 shuttle when the common fabrication process is complete, in
5 which one child lot comprises the coinsurance wafers, and the

Client's ref.: TSMC2003-0934/PE:SimonLu

Our ref.: 0503-A30087-USf/Yianhou/Kevin/Nelson

6 other child lots are processed with different metal layering
7 fabrication processes.

1 15. The method of claim 13 further comprising releasing
2 at least one of the coinsurance wafers to replace each original
3 wafer scrapped in the common fabrication process.

1 16. The method of claim 13 further comprising releasing
2 at least one of the coinsurance wafers, and processing it with
3 the metal layering fabrication process corresponding to each
4 original wafer scrapped in the metal layering fabrication
5 process.

1 17. The method of claim 13 further comprising delivering
2 respective products of each device design fabricated from the
3 original wafers to corresponding clients.

1 18. The method of claim 13 further comprising receiving
2 a request for at least one designated device design after the
3 metal layering fabrication processes.

1 19. The method of claim 18 wherein the request is received
2 before a cutoff date of the MPW shuttle.

Client's ref.: TSMC2003-0934/PE:SimonLu

Our ref.: 0503-A30087-USf/Yianhou/Kevin/Nelson

1 20. The method of claim 18 further comprising releasing
2 at least one of the coinsurance wafers for processing with the
3 corresponding metal layering fabrication process when the
4 request is received.

1 21. The method of claim 13 further comprising
2 transferring information of the coinsurance wafers to clients
3 via a network.

1 22. The method of claim 21 further comprising
2 transferring information of the original wafers corresponding
3 to the respective device designs to the corresponding clients.

1 23. The method of claim 13 wherein the metal layering
2 technology is the number of metal layers of each device design.

1 24. The method of claim 13 further comprising determining
2 the quantity of coinsurance wafers according to a scrapping rate
3 and the quantity of the original wafers.

1 25. A machine-readable storage medium storing a computer
2 program which when executed causes a computer to perform a method

Client's ref.: TSMC2003-0934/PE:SimonLu

Our ref.: 0503-A30087-USf/Yianhou/Kevin/Nelson

3 of coinsurance wafer management for use in MPW (multi-project
4 wafer) shuttle service, comprising the steps of:

5 processing at least one MPW shuttle with a common
6 fabrication process before metal layering, in which
7 the MPW shuttle includes a plurality of original
8 wafers and a quantity of coinsurance wafers;

9 processing the original wafers with different metal
10 layering fabrication processes according to a metal
11 layering technology of each device design of the MPW
12 shuttle; and

13 withholding the coinsurance wafers without further
14 fabrication.

1 26. The storage medium of claim 25 further comprising
2 splitting the MPW shuttle into a plurality of child lots
3 according to the metal layering technology of each device design
4 of the MPW shuttle when the common fabrication process is
5 complete, in which one child lot comprises the coinsurance
6 wafers, and the other child lots are processed with different
7 metal layering fabrication processes.

Client's ref.: TSMC2003-0934/PE:SimonLu

Our ref.: 0503-A30087-USf/Yianhou/Kevin/Nelson

1 27. The storage medium of claim 25 further comprising
2 releasing at least one of the coinsurance wafers to replace each
3 original wafer scrapped in the common fabrication process.

1 28. The storage medium of claim 25 further comprising
2 releasing at least one of the coinsurance wafers for each
3 original wafer scraped in the common fabrication process for
4 processing with the corresponding metal layering fabrication
5 process.

1 29. The storage medium of claim 25 further comprising
2 delivering respective products of each device designs
3 fabricated from the original wafers to corresponding clients.

1 30. The storage medium of claim 25 further comprising
2 receiving a request for at least one designated device design
3 of the device designs after the metal layering fabrication
4 processes.

1 31. The storage medium of claim 30 wherein the request is
2 received before a cutoff date of the MPW shuttle.

Client's ref.: TSMC2003-0934/PE:SimonLu

Our ref.: 0503-A30087-USf/Yianhou/Kevin/Nelson

1 32. The storage medium of claim 30 further comprising
2 releasing at least one of the coinsurance wafers, and processing
3 it with the corresponding metal layering fabrication process
4 when the request is received.

1 33. The storage medium of claim 25 further comprising
2 transferring information of the coinsurance wafers to clients
3 via a network.

1 34. The storage medium of claim 33 further comprising
2 transferring information of the original wafers corresponding
3 to the respective device designs to the corresponding clients.

1 35. The storage medium of claim 25 wherein the metal
2 layering technology is the number of metal layers of each device
3 design.

1 36. The storage medium of claim 25 further comprising
2 determining the quantity of coinsurance wafers according to a
3 scrapping rate and the quantity of the original wafers.